

## **Launch Mission Execution Forecast**

Mission: Falcon 9 NASA Crew-3

**Issued**: 28 Oct 2021 / 0830L (1230Z)

**Valid**: 31 Oct 2021 / 0216 – 0226L (0616 – 0626Z)



**Forecast Discussion**: A strong low pressure system is wrapping up across the Mid-Mississippi Valley this morning, with its associated cold front pushing a squall line through the eastern Gulf of Mexico and towards the west coast of Florida. This line is expected to push through the state into the Spaceport later this afternoon, bringing strong to severe thunderstorms with the potential for damaging winds, isolated tornadoes, and heavy rainfall before it exits late evening.

The parent storm system will become increasingly large and slow to move into the northeastern US, keeping conditions unsettled and showery across the Spaceport through the first part of Saturday. As the low gets further away from Florida, drier conditions will filter in leading to favorable launch conditions for the initial launch opportunity. The main concerns will be Cumulus Clouds and Flight Through Precipitation, though this activity is expected to be low-topped, light, and not a significant concern.

Weakening high pressure over the eastern US will be in place for the backup launch opportunity on Wednesday. Onshore flow will bring a few more low topped showers into the coast, keeping Cumulus Clouds and Flight Through Precipitation as the main concerns.

	Probability of Violating Weather Constraints								
Day	20% Primary Concerns: Cumulus Cloud Rule, Flight Through Precipitation								
ch	Weather Conditions							Additional Risk Criteria	
aunch	Weather/Visi	bility:	Isold Showers / 7 mi.	Туре	Clouds Coverage	Base (ft)	Tops (ft)	Upper-Level Wind Shear:	Low
Ľ	Temp/Humidity:		66°F / 60%	Cumulus	Scattered	3,000	8,000	Ascent Corridor Weather:	High
	<b>Liftoff Winds (200')</b> : 280° 10 - 15 mph							Solar Activity:	Low
	Probability of Violating Weather Constraints								
Delay	20% Primary Concerns: Cumulus Cloud Rule, Flight Through Precipitation								
			Weather	Conditions				Additional Risk Criteria	
72-Hour	Weather/Visibility:		Isold Showers / 7 mi.	Туре	Clouds Coverage	Base (ft)	Tops (ft)	Upper-Level Wind Shear:	Low
72.	Temp/Humidity:		65°F / 75%	Cumulus	Scattered	3,500	5,000	Ascent Corridor Weather:	Low
	Liftoff Winds (200'):		040° 7 - 12 mph	Cirrus	Scattered	25,000	30,000	Solar Activity:	Low

**Note**: The Probability of Violation (POV) is the chance that a Lightning Launch Commit Criteria (LLCC) or certain user constraints (surface winds, precipitation, and temperatures, etc.) will be violated during the launch window. It does not take into account upper-level wind shear, booster recovery weather, and solar activity.

Next Forecast Will Be Issued 29

29 Oct 2021